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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER

PERALTA, GINETTE

ART UNIT PAPER NUMBER

2814

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

14A

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/810,735 | YU, JICK M. | |
| | Examiner | Art Unit | |
| | Ginette Peralta | 2814 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/25/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 18-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 18 recites the limitation "said annealing chamber" in line 1. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 19 recites the limitation "said annealing chamber" in line 1. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: an annealing chamber and a CMP platform in the independent claim and their structural relationship, the limitation of a robot moving a wafer "from said annealing chamber to said CMP platform" is indefinite because neither an annealing chamber nor a CMP platform have been identified in either claim 14 from which claim 20 depends or claim 20 itself.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, 5, 7, 8, 10, 13-17, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Henley et al. (U. S. Pat. 6,207,005 B1).

Regarding claim 1, Henley et al. discloses in Fig. 3 an apparatus 300 comprising a metal deposition tool having annealing capability.

Regarding claim 2, Henley et al. discloses in Fig. 3 that the apparatus further comprises an annealing chamber 303 on the metal deposition tool 300.

Regarding claim 4, Henley et al. discloses in col. 4, lines 63-67 that the metal deposition tool 302 (or 32) is a chemical vapor deposition (CVD) tool.

Regarding claim 5, Henley et al. discloses in Fig. 3 and col. 4, lines 63-67 that the metal deposition tool has a plurality of metal deposition chambers, the metal deposition

tool being modified to replace one of the metal deposition chambers with an annealing chamber.

Regarding claim 7, Henley et al. discloses in col. 4, lines 63-67 that the metal deposition tool is a chemical vapor deposition tool (CVD) and the metal deposition chamber is a chemical vapor deposition chamber.

Regarding claim 8, Henley et al. discloses in Fig. 3 that the metal deposition tool includes at least one metal deposition chamber 302 and an annealing chamber 303 on the metal deposition tool.

Regarding claim 10, Henley et al. discloses in col. 4, lines 63-67 that the metal deposition tool is a chemical vapor deposition tool (CVD) and the metal deposition chamber is a chemical vapor deposition chamber.

Regarding claim 13, Henley et al. discloses in Fig. 3 that the apparatus further comprises a robot 20, wherein the robot moves a wafer from the metal deposition chamber to the annealing chamber as disclosed in col. 4, lines 15-21.

Regarding claim 14, Henley et al. discloses in Fig. 3 an apparatus comprising a chemical mechanical polishing (CMP) tool 300 having annealing capability.

Regarding claim 15, Henley et al. discloses in Fig. 3, that the apparatus further comprises an annealing chamber 303 on the CMP tool 300.

Regarding claim 16, Henley et al. discloses that the CMP tool has a plurality of CMP platforms, the CMP tool being modified to replace one of the CMP platforms with an annealing chamber 303.

Regarding claim 17, Henley et al. discloses that the CMP tool includes at least one CMP platform 305 and an annealing chamber 303 on the CMP tool.

Regarding claim 20, Henley et al. discloses in Fig. 3 that the apparatus further comprises a robot 20, wherein the robot moves a wafer from a metal deposition chamber to an annealing chamber as disclosed in col. 4, lines 15-21.

3. Claims 1, 2, 4, 5, 7, 8, 10-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (U. S. Pat. 5,578,520).

Regarding claim 1, Zhang et al. discloses in Fig. 3 an apparatus comprising a metal deposition tool having annealing capability.

Regarding claim 2, Zhang et al. discloses in Fig. 3 that the apparatus further comprises an annealing chamber 14 on the metal deposition tool, as disclosed in col. 7, lines 34-45.

Regarding claim 4, Zhang et al. discloses in col. 7, lines 34-45 that the metal deposition tool is a chemical vapor deposition (CVD) tool.

Regarding claim 5, Zhang et al. discloses in Fig. 3 and col. 7, lines 34-45 that the metal deposition tool has a plurality of metal deposition chambers 13 and 15, the metal deposition tool being modified to replace one of the metal deposition chambers with an annealing chamber.

Regarding claim 7, Zhang et al. discloses in col. 7, lines 34-45 that the metal deposition tool is a chemical vapor deposition tool (CVD) and the metal deposition chamber is a chemical vapor deposition chamber.

Regarding claim 8, Zhang et al. discloses in Fig. 3 that the metal deposition tool includes at least one metal deposition chamber 13 and an annealing chamber 14 on the metal deposition tool.

Regarding claim 10, Zhang et al. discloses in col. 7, lines 34-45 that the metal deposition tool is a chemical vapor deposition tool (CVD) and the metal deposition chamber is a chemical vapor deposition chamber.

Regarding claim 11, Zhang et al. discloses in col. 6, lines 30-34 that the annealing chamber includes heat lamps.

Regarding claim 12, Zhang et al. discloses in col. 6, lines 7-10 that the annealing chamber is a furnace.

Regarding claim 13, Zhang et al. discloses in Fig. 3 that the apparatus further comprises a robot 18, wherein the robot moves a wafer from the metal deposition chamber to the annealing chamber as disclosed in col. 7, lines 40-45.

4. Claims 1-3, 5-6, 8-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Dordi et al. (U. S. Pat. 6,267,853 B1).

Regarding claim 1, Dordi et al. discloses in Fig. 3 an apparatus comprising a metal deposition tool having annealing capability.

Regarding claim 2, Dordi et al. discloses in Fig. 3 that the apparatus further comprises an annealing chamber 211 on the metal deposition tool, as disclosed in col. 5, lines 19-20.

Regarding claim 3, Dordi et al. discloses in col. 5, lines 16-18 that the metal deposition tool is an electroplating tool.

Regarding claim 5, Dordi et al. discloses in Fig. 3 that the metal deposition tool has a plurality of metal deposition chambers, the metal deposition tool being modified to replace one of the metal deposition chambers with an annealing chamber.

Regarding claim 6, Dordi et al. discloses in col. 5, lines 16-18 that the metal deposition tool is an electroplating tool and that the metal deposition chamber 214 is an electroplating chamber.

Regarding claim 8, Dordi et al. discloses in Fig. 3 that the metal deposition tool includes at least one metal deposition chamber 214 and an annealing chamber 211 on the metal deposition tool.

Regarding claim 9, Dordi et al. discloses in col. 5, lines 16-18 that the metal deposition tool is an electroplating tool and that the metal deposition chamber 214 is an electroplating chamber.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henley et al. in view of Zhang et al..

Henley et al. discloses in Fig. 3 an apparatus comprising a chemical mechanical polishing (CMP) tool 300 having annealing capability, and further including an annealing chamber 303, wherein in col. 10, line 65- col. 11, line 19 Henley et al. discloses that the annealing chamber may be one of a variety of commonly known and used ones.

Zhang et al. discloses as a conventional annealing chamber a furnace that comprises heat lamps, as disclosed in col. 6, lines 9-10 and 30-34, wherein the chamber is disclosed as a well known heating chamber.

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the annealing chamber of Henley et al. a well known annealing chamber comprising a furnace and heat lamps, for the disclosed intended and well known purpose of providing thermal treatments in a variety of processes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ginette Peralta whose telephone number is (571) 272-1713. The examiner can normally be reached on Monday to Friday 8:00 AM- 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GP

A handwritten signature in black ink, appearing to read 'Hoai Pham', with a long horizontal flourish extending to the right.

**HOAI PHAM
PRIMARY EXAMINER**